Summary

Incidence:
- Barnsley’s 2012/13 cancer incidence rate (551.9 per 100,000) is significantly higher than the rate for England (507.5 per 100,000) (figure 1).
- 1,373 people were diagnosed with cancer during 2012/13.
- Of the four biggest tumour types (breast, lower gastrointestinal, lung and urology), the highest incidence rate in Barnsley is for breast cancer (164.4 per 100,000) in 2013 (figure 3).
- Barnsley’s 2013 rate for lung cancer incidence (101.6 per 100,000) is significantly higher than the rate for England (83.3 per 100,000) (figure 5).
- For incidence of lung cancer within Barnsley, there are large geographical differences, with the rate in Dearne North (221.5) being almost three times higher than in Penistone West (73.9) (figure 10).

Prevalence:
- Barnsley’s 2014/15 rate for cancer prevalence (2.4%) is significantly higher than the rate for England (2.3%) (figure 12).

Screening:
- Barnsley’s 2014/15 breast screening rate (77.4%) is significantly higher than the England rate (72.2%) (figure 15).
- Barnsley’s 2014/15 cervical screening rate (77.7%) is significantly higher than the England rate (73.5%), although it is the lowest rate during the period 2009/10 to 2014/15 (figures 18 and 19).
- Barnsley’s 2014/15 bowel screening rate (59.3%) is significantly higher than the England rate (57.9%) (figure 21).

Routes to Diagnosis:
- The majority of lung cancers in Barnsley (42%) are diagnosed as a result of emergency presentation. This is a significantly higher rate than the rate for England (37%), and does not reflect the national picture (table 1).
- Barnsley’s rates for diagnoses of breast, colorectal, lung and prostate cancers via a managed route are significantly lower than the rates for England (table 1).

Staging:
- The proportion of colorectal cancers diagnosed at Stage 1 or 2 in Barnsley (32.7%) is lower than the England rate (36.8%) and the proportion diagnosed at Stage 4 (28.6%) is higher than the rate for England (21.7%) (table 2).
- The proportion of lung cancers diagnosed at Stage 4 in Barnsley (56.3%) is higher than the rate for England (47.3%). The proportion diagnosed at Stage 1 or 2 in Barnsley (16.0%) is lower than the England rate (20.3%) (table 2).

Survival:
- Barnsley’s one-year cancer survival rate (67.7%) is lower than the rate for England (69.3%) (figure 34).
- Survival rates have increased steadily during the period 1997 to 2012; this reflects the trend at national level (figures 36 and 37).

Patient Experience:
- The proportion of people in Barnsley who rate their overall care as excellent or very good (91.6%) is higher than the England rate of 89.0% and is the second highest in the comparator group (figure 38).
Key Points (continued):

Mortality:

- During 2012-2014 in Barnsley, 1,957 people were registered as dying from cancer, accounting for more than a quarter (28.5%).
- Lung cancer is responsible for the greatest proportion of cancer deaths in Barnsley (25.8% of all male and 25.1% of all female cancer deaths) (figures 39 and 40).
- Barnsley’s rate for mortality from lung cancer (71.6 per 100,000) is higher than the rate for England (66.6 per 100,000), but not significantly higher (figure 43).

- Within Barnsley, three wards (St Helens, Stairfoot and Dearne South) have significantly higher cancer mortality rates for all cancers than the overall rate for Barnsley (303.9 per 100,000). Two wards (Darton West and Penistone West) have significantly lower rates than the Barnsley rate (figure 45).
- In terms of breast cancer, although Darton West has the second highest incidence rate within Barnsley, it has the lowest mortality rate (15.6 per 100,000). Conversely, Dearne South has the lowest incidence rate, but the third highest mortality rate (46.1 per 100,000) (figure 46).
- With regard to lung cancer, four wards (Dearne South, Dearne North, St Helens and Stairfoot) have significantly higher mortality rates than the overall rate for Barnsley (77.9 per 100,000) (figure 48).

- In terms of deprivation, mortality rates from all cancers are higher in the most deprived areas of Barnsley (figure 50). However, with regard to breast cancer, the lowest rates are in the most deprived quintiles (1 and 2).
- With regard to lower GI cancer, the rate in the most deprived quintile (26.1 per 100,000) is more than double the rate in the least deprived quintile (12.0 per 100,000) (figure 52).
- Mortality from lung cancer, in Barnsley, reflects the pattern of deprivation. The rate in the most deprived quintile (111.6 per 100,000) is three times higher than the rate in the least deprived quintile (37.2 per 100,000) (figure 53).
- The rate for mortality from prostate cancer in the least deprived quintile (60.0 per 100,000) is more than double the rate in the second least deprived quintile (26.2 per 100,000) (figure 54).
- For women in Barnsley, cancer is the largest cause of death contributing to the life expectancy gap between the most deprived and least deprived areas (26.9%) (figure 55).

- Barnsley’s 2012/14 rate for cancer mortality in under 75s (157.3 per 100,000) is significantly higher than the rate for England (141.5 per 100,000) (figure 56).
- Under 75 cancer mortality rates have decreased from 197.0 per 100,000 in 2001/03 to 157.3 per 100,000 in 2012/14.

Purpose & Context:

- The purpose of this report is to present information relating to cancer in Barnsley, including incidence, prevalence, screening, routes to diagnosis, staging, survival, patient experience and mortality data.

- The data used has been collated from various data sources including Public Health England, Cancer Research UK, National Cancer Intelligence Network and Office for National Statistics.
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Incidence:

Cancer incidence is the number of new persons diagnosed with malignant cancer during a given period. Incidence data can give an indication of the demand for initial diagnostic and treatment services. This can help target resources to geographic areas or tumour groups and estimate future demand. As life expectancy increases, we can expect to see an increase in the number of cancers diagnosed each year, as a result of the ageing population.

Figure 1. Cancer incidence rate for Barnsley CCG, 10 ‘similar’ CCGs and England (2012/13)

- Barnsley’s 2012/13 rate for cancer incidence (551.9 per 100,000) is significantly higher than the rate for England (507.5 per 100,000).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the fifth lowest.
- Of the 10 ‘similar’ CCGs, nine have significantly higher rates than the rate for England.
- Barnsley’s 2012/13 rate of 551.9 per 100,000 represents 1,373 people diagnosed.

Figure 2. Cancer incidence rate for Barnsley CCG, Yorkshire and Humber NHS Region and England (2009/10 to 2012/13)

- Barnsley’s rates for cancer incidence are higher than the rates for Yorkshire and the Humber (Y&H) and England at each time point during the period 2009/10 to 2012/13.
- Barnsley’s 2012/13 rate of 551.9 per 100,000 is the highest during the period; this reflects the regional and national trend.
Incidence by tumour type:

The following four charts illustrate cancer incidence rates for the biggest four tumour groups (breast, lower gastrointestinal, lung and urology). The incidence of cancer rises sharply with age. Therefore, the rates are age-standardised; this means they take into account age differences in the underlying populations to allow comparisons between different areas to be made.

Figure 3. Incidence rate for breast cancer, Barnsley CCG, 10 ‘similar’ CCGs and England (2013)

- Barnsley’s 2013 rate for breast cancer incidence (164.4 per 100,000) is similar to the rate for England (169.6 per 100,000).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the third highest.
- Of the 10 ‘similar’ CCGs, two have significantly lower rates than the rate for England (Mansfield and Ashfield CCG and North East Lincolnshire CCG).
- Barnsley’s 2013 rate of 164.4 per 100,000 represents 197 people diagnosed.

Figure 4. Incidence rate for lower gastrointestinal (GI) cancer (includes colorectal), Barnsley CCG, 10 ‘similar’ CCGs and England (2013)

- Barnsley’s 2013 rate for lower GI cancer incidence (64.1 per 100,000) is lower than the rate for England (75.8 per 100,000), but not significantly lower.
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the second lowest.
- Of the 10 ‘similar’ CCGs, one has a significantly lower rate than the rate for England (Warwickshire North CCG).
Incidence

- Barnsley’s 2013 rate for lung cancer incidence (101.6 per 100,000) is significantly higher than the rate for England (83.3 per 100,000).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the third lowest.
- Of the 10 ‘similar’ CCGs, eight (in addition to Barnsley) have significantly higher rates than the rate for England.
- Barnsley’s 2013 rate of 101.6 per 100,000 represents 223 people diagnosed with lung cancer.

- Barnsley’s 2013 rate for urology cancer incidence (119.3 per 100,000) is significantly lower than the rate for England (136.8 per 100,000).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the second lowest.
- Barnsley’s 2013 rate of 119.3 per 100,000 represents 250 people diagnosed with urological cancer.

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Incidence at local level:

This section illustrates standardised incidence ratios (SIR) for incidence of all cancers, and site specific cancers, by Barnsley electoral wards. A SIR is a measure of risk of disease in one group (ie electoral ward) compared with another group (in this case, England). A SIR of 100 indicates incidence is the same in both groups, while a number greater than 100 indicates a higher incidence and a number lower than 100 indicates a lower incidence.

Note: due to smaller cohorts at the lower level of geography and specific tumour types, confidence intervals are large (figures 8 to 11). This could potentially lead to less reliable results.

Figure 7. Standardised incidence ratio for all cancers, Barnsley and electoral wards (2007-2011)

- All wards, apart from Royston, Rockingham, Penistone East, Hoyland Milton and Penistone West have a higher incidence for all cancers than England.
- Two wards (Dearne North and Stairfoot) have significantly higher rates than Barnsley.
- Penistone West ward has a significantly lower rate than Barnsley.
- Within the Barnsley wards, SIRs range from 87.1 in Penistone West to 126.9 in Dearne North.
• Five wards (Darton East, Darton West, Old Town, Darfield and Penistone West) have a higher incidence for breast cancer than England.
• None of the wards have significantly different rates to Barnsley.
• Within the Barnsley wards, SIRs range from 73.2 in Dearn South to 119.2 in Darton East.

Figure 9. Standardised incidence ratio for colorectal cancer, Barnsley and electoral wards (2007-2011)

• Eleven wards (St Helens, Dearne North, Worsbrough, Stairfoot, Wombwell, Kingston, Monk Bretton, North East, Central, Cudworth and Darfield) have a higher incidence for colorectal cancer than England.
• None of the wards have significantly different rates to Barnsley for incidence of colorectal cancer.
• Within the Barnsley wards, SIRs range from 78.1 in Penistone West to 130.2 in St Helens.

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• All wards, apart from Penistone East and Penistone West have a higher incidence for lung cancer than England.
• Four wards (Dearne North, Stairfoot, St Helens and Cudworth) have significantly higher rates than Barnsley for incidence of lung cancer.
• Penistone East and Penistone West wards have significantly lower rates than Barnsley.
• There are large geographical differences between the Barnsley wards, with the SIR in Dearne North (221.5) being almost three times higher than the SIR in Penistone West (73.9).

Figure 11. Standardised incidence ratio for prostate cancer, Barnsley and electoral wards (2007-2011)

• All wards, apart from Dearne North have a lower incidence for prostate cancer than England.
• None of the wards have significantly different rates to Barnsley for incidence of prostate cancer.
• There are large geographical differences between the Barnsley wards, with the SIR in Dearne North (103.2) being more than double the SIR in Rockingham (48.8).
Prevalence:

Cancer prevalence is the number of people, or the proportion of the population, who are alive on a specified date and have previously been diagnosed with cancer. The number of people alive with a diagnosis of cancer is increasing, as incidence rises and survival improves.

Figure 12. Cancer prevalence rate for Barnsley CCG, 10 'similar' CCGs and England (2014/15)

- Barnsley’s 2014/15 rate for cancer prevalence (2.4%) is significantly higher than the rate for England (2.3%).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the third highest.
- Of the 10 ‘similar’ CCGs, three have significantly lower rates than the rate for England (Doncaster CCG, Wigan Borough CCG and Hartlepool and Stockton-on-Tees CCG).
- Barnsley’s 2014/15 rate of 2.4% represents 5,972 people living in Barnsley who have been diagnosed with cancer in the past.

Figure 13. Cancer prevalence rate for Barnsley CCG, Yorkshire and Humber NHS Region and England (2012/13 to 2014/15)

- Barnsley’s rates for cancer prevalence are higher than the rates for Y&H and England at each time point during the period 2012/13 to 2014/15.
- Barnsley’s 2014/15 rate of 2.4% is the highest during the period; this reflects the regional and national trend.

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Cancer prevalence rates amongst Barnsley GP practices in 2014/15 range from 3.3% (practice C85624) to 1.4% (practice C85009).

Of the 36 practices, five (C85624, C85026, C85017, C85003 and C85014) have significantly higher rates than the Barnsley average.

Eight practices (C85619, Y02815, C85617, C85019, Y04809, Y00411, Y02644 and C85009) have significantly lower rates than the Barnsley average.

Note: due to smaller cohorts at GP practice level, confidence intervals are large. This could potentially lead to less reliable results.
The Cancer Awareness Measure (CAM) was developed by Cancer Research UK in 2008 to address the lack of a validated measure for awareness of cancer and inconsistencies regarding the best way to measure this. The CAM consists of a validated set of questions designed to reliably assess awareness of cancer among the general population. It is carried out via a face-to-face, computer assisted interview. The measure includes warning signs, help-seeking, risk factors, cancer and age, most common cancers and NHS screening programmes.

The CAM can be used at national, regional and local levels to monitor/track awareness over time, compare between groups, identify information needs, and monitor the impact of awareness-raising interventions. Ultimately, assessing awareness in this way will help accelerate cancer prevention and early diagnosis.

Although there are no published data at a local level from the CAM, the main points of the study into public awareness of cancer in Britain are:

- Unprompted recall of cancer symptoms was poor (<30%) with the exception of ‘lump or swelling’, but was considerably higher when closed (recognition) questions were used.
- Awareness of cancer warning signs was lower in men, younger people and those from lower socioeconomic status (SES) groups or ethnic minorities.
- The most commonly recognised barriers to seeking help were difficulty making an appointment, worry about wasting the doctor’s time and worry about what would be found.
- Emotional barriers (eg embarrassed or scared) were more prominent in lower SES groups and practical barriers (eg too busy) more prominent in higher SES groups.
- Anticipated delay in presentation with symptoms was lower in ethnic minority and lower SES groups.

The study concluded that “a combination of public education about symptoms and empowerment to seek medical advice, as well as support at primary care level, could enhance early presentation and improve cancer outcomes”.

Cancer Screening:

The UK National Screening Committee makes UK-wide policies, recommending systematic population screening programmes for breast, cervical and bowel cancer. A key measure used is screening ‘coverage’.

Breast Screening:

Breast cancer screening is intended to detect breast cancer at an early stage, enabling more effective treatment. In the UK, women aged 50 to 70 are routinely invited for breast screening every three years under a national programme. In England, since 2010, the programme has been phasing in an extension of the age range of women eligible for screening to those aged 47 to 73.

Coverage is defined as the percentage of women resident and eligible for screening at a particular point in time who had a test with a recorded result within the last three years.

Figure 15. Females, 50-70, screened for breast cancer in last 36 months, Barnsley CCG, 10 ‘similar’ CCGs and England (2014/15)

- Barnsley’s 2014/15 rate for breast cancer screening (77.4%) is **significantly higher** than the rate for England (72.2%).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the third highest.
Barnsley’s rates for breast cancer screening have been **consistently higher** than the rates for Y&H and England at each time point during the period 2009/10 to 2014/15.

Barnsley’s rates have fluctuated during the period; the 2014/15 rate of 77.4% is the highest.

Breast cancer screening rates amongst Barnsley GP practices in 2014/15 range from 84.4% (practice C85010) to 63.8% (practice C85023).

Of the 36 practices, **seven** (C85010, C85006, C85020, C85033, C85004, C85008 and C85022) have **significantly higher** rates than the Barnsley average.

**Eight** practices (C85016, C85028, Y02644, C85012, C85009, Y00411, Y04809 and C85023) have **significantly lower** rates than the Barnsley average.
Cervical cancer screening is intended to detect abnormalities within the cervix that could, if untreated, develop into cancer. The cervical screening policy for England invites women for screening every three years for those aged 25 to 49 and every five years for those aged 50 to 64.

Coverage is defined as the percentage of women in a population eligible for screening at a given point in time who were screened adequately within a specified period.

**Figure 18. Females, 25-64, screened for cervical cancer within target period (3.5 or 5.5 years), Barnsley CCG, 10 ‘similar’ CCGs and England (2014/15)**

- Barnsley’s 2014/15 rate for cervical cancer screening (77.7%) is **significantly higher** than the rate for England (73.5%).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the third highest.

**Figure 19. Females, 25-64, screened for cervical cancer within target period (3.5 or 5.5 years), Barnsley CCG, Yorkshire and Humber NHS Region and England (2009/10 to 2014/15)**

- Barnsley’s rates for cervical cancer screening have been **consistently higher** than the rates for Y&H and England at each time point during the period 2009/10 to 2014/15.
- Barnsley’s rates have fluctuated during the period. The 2014/15 rate of 77.7% is the lowest during the period; this reflects the regional and national trend.
Cervical cancer screening rates amongst Barnsley GP practices in 2014/15 range from 86.8% (practice Y02644) to 69.2% (practice C85009).

Of the 36 practices, eight (Y02644, C85026, C85008, C85624, C85004, C85010, C85024 and C85033) have significantly higher rates than the Barnsley average.

Ten practices (C85019, C85619, C85007, C85017, C85023, Y00411, C85628, C85012, C85028 and C85009) have significantly lower rates than the Barnsley average.
Bowel cancer screening aims to detect bowel cancer at an early stage, when treatment is more likely to be effective or to help prevent cancer from developing in the first place by allowing the treatment of pre-cancerous conditions.

In England, men and women aged 60 to 69 are invited for bowel screening every two years, with the age range currently being extended to 60 to 74. A further one-off diagnostic test is being piloted, aimed at men and women aged 55. By 2016, everyone in England will be invited to have this test at the appropriate age.

**Figure 21. Persons, 60-69, screened for bowel cancer in the last 30 months, Barnsley CCG, 10 ‘similar’ CCGs and England (2014/15)**

- Barnsley’s 2014/15 rate for bowel cancer screening (60.1%) is **significantly higher** than the rate for England (57.9%).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the fourth highest.

**Figure 22. Persons, 60-69, screened for bowel cancer in the last 30 months, Barnsley CCG, Yorkshire and Humber NHS Region and England (2009/10 to 2014/15)**

- Barnsley’s rates for bowel cancer screening have been **consistently higher** than the rates for England at each time point during the period 2009/10 to 2014/15.
- Barnsley’s rates have fluctuated during the period, but have remained relatively constant since 2011/12.
• Bowel cancer screening rates amongst Barnsley GP practices in 2014/15 range from 67.4% (practice C85623) to 40.0% (practice C85628).

• Of the 36 practices, six (C85623, C85010, C85004, C85026, C85020 and C85033) have significantly higher rates than the Barnsley average.

• Seven practices (C85022, C85003, C85028, C85019, C85622, C85009 and C85628) have significantly lower rates than the Barnsley average.
Later cancer diagnosis is a major explanation for poorer survival rates. In England, the Improving Outcomes: A Strategy for Cancer estimates that, if patients were diagnosed at the same earlier stage as they are in other countries up to 10,000 deaths could be avoided every year. The Strategy states that the challenge is clear: ‘In order to improve early diagnosis, we need to encourage people to recognise the symptoms and signs of cancer and seek advice from their doctor as soon as possible. We also need doctors to recognise these symptoms and (if appropriate) refer people urgently for specialist care.’ (National Cancer Intelligence Network).

Urgent GP referrals for suspected cancer are classified as two-week wait referrals. There are large geographical differences in urgent referral rates between CCGs; generally CCGs with high referral rates are those that have above average levels of cancer incidence.

**Two-week wait referrals for suspected cancer:**

*Figure 24. Two-week wait referrals for suspected cancer, Barnsley CCG, 10 ‘similar’ CCGs and England (2014/15)*

- Barnsley’s 2014/15 rate for two-week wait referrals for suspected cancer (2,875.7 per 100,000) is **significantly higher** than the rate for England (2,707.7 per 100,000).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the fifth highest.
- Barnsley’s 2014/15 rate of 2,875.5 per 100,000 represents 7,215 urgent referrals.

*Figure 25. Two-week wait referrals for suspected cancer, Barnsley CCG, Yorkshire and Humber NHS Region and England (2009/10 to 2014/15)*

- Barnsley’s rates for two-week wait referrals for suspected cancer have been **consistently higher** than the rates for Y&H and England at each time point during the period 2009/10 to 2014/15.
- Barnsley’s rates have increased during the period; the 2014/15 rate of 2875.7 per 100,000 is the highest. This reflects the national and regional trend.
Two-week wait referrals by suspected cancer type: Breast cancer

Figure 26. Two-week wait referrals for suspected breast cancer, Barnsley CCG, 10 ‘similar’ CCGs and England (2014/15)

- Barnsley’s 2014/15 rate for two-week wait referrals for suspected breast cancer (501.8 per 100,000) is lower than the England rate of 481.9 per 100,000, but not significantly lower.

- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the fifth lowest.

- Barnsley’s 2014/15 rate of 501.8 per 100,000 represents 1,259 urgent referrals.

Figure 27. Two-week wait referrals for suspected breast cancer, Barnsley CCG, Yorkshire and Humber NHS Region and England (2009/10 to 2014/15)

- Barnsley’s rates for two-week wait referrals for suspected breast cancer have been consistently higher than the rates for Y&H and England at each time point during the period 2009/10 to 2014/15.

- Barnsley’s rates have increased during the period; the 2014/15 rate of 501.8 per 100,000 is the highest. This reflects the trend at regional and national level.
- Barnsley’s 2014/15 rate for two-week wait referrals for suspected lower GI cancers (395.8 per 100,000) is lower than the England rate of 420.7 per 100,000, but not significantly lower.

- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the second lowest.

- Barnsley’s 2014/15 rate of 395.8 per 100,000 represents 993 urgent referrals.

- Barnsley’s rates for two-week wait referrals for suspected lower GI cancers have fluctuated during the period 2009/10 to 2014/15.

- Barnsley’s 2014/15 rate (395.8) is lower than the regional and national rates (458.1 and 420.7 per 100,000 respectively).

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Two-week wait referrals by suspected cancer type: Lung cancer

Figure 30. Two-week wait referrals for suspected lung cancer, Barnsley CCG, 10 ‘similar’ CCGs and England (2014/15)

- Barnsley’s 2014/15 rate for two-week wait referrals for suspected lung cancer (113.2 per 100,000) is higher than the England rate of 100.5 per 100,000, but not significantly higher.

- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the fifth lowest.

- Barnsley’s 2014/15 rate of 395.8 per 100,000 represents 284 urgent referrals.

Figure 31. Two-week wait referrals for suspected lung cancer, Barnsley CCG, Yorkshire and Humber NHS Region and England (2009/10 to 2014/15)

- Barnsley’s rates for two-week wait referrals for suspected lung cancer have been consistently higher than the rates for Y&H and England at each time point during the period 2009/10 to 2014/15.

- Barnsley’s rates have increased during the period; the 2014/15 rate of 113.2 per 100,000 is the highest. This reflects the trend at regional and national level.

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**Routes to diagnosis**

Two-week wait referrals by suspected cancer type: Skin cancer

*Figure 32. Two-week wait referrals for suspected skin cancer, Barnsley CCG, 10 'similar' CCGs and England (2014/15)*

- Barnsley’s 2014/15 rate for two-week wait referrals for suspected skin cancer (454.4 per 100,000) is **significantly lower** than the England rate of 507.5 per 100,000.

- Compared to 10 'similar' CCGs, Barnsley’s rate is the fifth highest.

- Barnsley’s 2014/15 rate of 454.4 per 100,000 represents 1,140 urgent referrals.

*Figure 33. Two-week wait referrals for suspected skin cancer, Barnsley CCG, Yorkshire and Humber NHS Region and England (2009/10 to 2014/15)*

- Barnsley’s rates for two-week wait referrals for suspected skin cancer have been **consistently lower** than the rates for Y&H and England at each time point during the period 2009/10 to 2014/15.

- Barnsley’s rates have increased during the period; the 2014/15 rate of 454.4 per 100,000 is the highest. This reflects the trend at regional and national level.

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Table 1. Percentage of cancer diagnoses by route, for those diagnosed between 2006 and 2013, Barnsley and England

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Source: Public Health England (Routes to diagnosis 2006-2013)

**Key: Significantly worse than England**

- **Breast** cancer: the majority of diagnoses, in Barnsley and nationally, are via a managed route (includes two-week wait, GP referral, inpatient elective and other outpatient routes). However, Barnsley’s rate for breast cancers diagnosed via a managed route (55%) is **significantly lower** than the England rate (59%). Barnsley’s rate for breast cancers diagnosed via ‘other’ routes (11%) is **significantly higher** than the rate for England (7%).

- **Colorectal** cancer: the majority of diagnoses are via a managed route, both in Barnsley and nationally. However, Barnsley’s rate for colorectal cancers diagnosed via a managed route (42%) is **significantly lower** than the rate for England (53%). Additionally, Barnsley’s rate for colorectal cancers diagnosed via ‘other’ routes (28%) is **significantly higher** than the England rate (16%).

- **Lung** cancer: the majority of diagnoses in Barnsley (42%) are as a result of emergency presentation. This is a **significantly higher** rate than the rate for England (37%), and does not reflect the national picture, where the majority of lung cancers (47%) are detected via a managed route. Barnsley’s rate of 37% for lung cancers diagnosed via a managed route is **significantly lower** than England rate. Conversely, Barnsley’s rate for diagnoses via ‘other’ routes (21%) is **significantly higher** than the rate for England (16%).

- **Prostate** cancer: the majority of diagnoses, in Barnsley and nationally, are via a managed route. However, Barnsley’s rate for prostate cancers diagnosed via a managed route (58%) is **significantly lower** than the England rate (74%). Barnsley’s rate for prostate cancers diagnosed via ‘other’ routes (32%) is **significantly higher** than the rate for England (17%).

Produced by the Research and Business Intelligence Team: Research&BusinessIntelligenceTeam@barnsley.gov.uk
To assess the impact of early diagnosis campaigns, screening programmes and improvements in healthcare it is important to have accurate and complete detail on the stage of a cancer at diagnosis. Stage is a measure of how much a cancer has grown and spread, with later stages having poorer outcomes. The following table illustrates Barnsley's stage breakdown for lung, breast, prostate and colorectal cancers compared to England. Stages 1 and 2 are classified as cancers being diagnosed at an early stage.

### Table 2. Percentage of cancers diagnosed at stages 1 to 4 in 2013, Barnsley and England

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Source: Public Health England (National Cancer Intelligence Network)

**Key:** Worse than England | Better than England

- **Breast** cancer: the majority of diagnoses, in Barnsley and England are made at Stage 1. The proportion of breast cancers diagnosed at Stage 1 or 2 in Barnsley (79.7%) is higher than the rate for England (70.9%). However, the proportion diagnosed at Stage 4 in Barnsley (7.6%) is also higher than the rate for England (4.8%).

- **Colorectal** cancer: the majority of colorectal cancers in Barnsley (28.6%) are diagnosed at Stage 4, whereas nationally, the majority are diagnosed at Stage 3. The proportion diagnosed at Stage 1 or 2 in Barnsley (32.7%) is lower than the England rate (36.8%).

- **Lung** cancer: the majority of diagnoses, in Barnsley and nationally, are made at Stage 4, although the proportion diagnosed at Stage 4 in Barnsley (56.3%) is higher than the rate for England (47.3%). The proportion diagnosed at Stage 1 or 2 in Barnsley (16.0%) is lower than the England rate (20.3%).

- **Prostate** cancer: the majority of prostate cancers, in Barnsley and nationally, are diagnosed at Stage 1. The proportion diagnosed at Stage 1 or 2 in Barnsley (53.2%) is higher than the rate for England (48.3%). Additionally, the proportion diagnosed at Stage 4 in Barnsley (15.4%) is lower than the England rate (16.7%).
Cancer survival rates give an indication of successful service provision, and variations could indicate differing practice which may need to be further investigated. Understanding variation in survival rates can facilitate service planning and development, and help target resources. Cancer survival rates are improving thanks to earlier diagnosis and better treatments. However, survival rates in England and the UK still lag behind much of the rest of Europe. Variation exists across the country as well as for different segments of the population and for people with different cancer types.

Figure 34. One-year survival (all cancers), Barnsley CCG, 10 ‘similar’ CCGs and England (15-99 year-olds diagnosed in 2012)

- Barnsley’s rate for one-year cancer survival for people diagnosed in 2012 (67.7%) is lower than the rate for England (69.3%).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the fourth lowest. All but one of the comparator CCGs have lower rates than England.

Figure 35. One year survival (breast, colorectal and lung cancers), Barnsley CCG, 10 ‘similar’ CCGs and England (15-99 year olds diagnosed in 2012)

- Barnsley’s one-year cancer survival rate for people diagnosed with breast, colorectal and lung cancers in 2012 (69.7%) is slightly lower than the rate for England (70.5%).
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the fifth highest. All but two of the similar CCGs have lower rates than England.

Produced by the Research and Business Intelligence Team: Research&BusinessIntelligenceTeam@barnsley.gov.uk
Barnsley’s one-year cancer survival rates for have been **consistently lower** than the rates for England at each time point during the period 1997 to 2012.

Barnsley’s rates have increased steadily during the period; the 2012 rate of 67.7% is the highest. This reflects the trend at national level.

Barnsley’s one-year survival rates for breast, colorectal and lung cancers have been **consistently lower** than the rates for England at each time point during the period 1997 to 2012.

Barnsley’s rates have increased during the period; the 2012 rate of 69.7% is the highest. This reflects the trend at national level.
Patient experience encompasses most aspects of care outside of the impact of treatment. It includes things like whether patients were treated with dignity and respect, given good information, involved in decisions, and their views and preferences listened to and taken into account.

The experience of care is measured by the National Cancer Patient Experience Survey (CPES) of people who have been a hospital inpatient or day case. The 2014 data have been collated to represent people with all cancers resident in the CCG.

Figure 38. Proportion of people who rate their overall care as excellent or very good, Barnsley CCG, 10 ‘similar’ CCGs and England, 2014

- The proportion of people, in Barnsley, who rate their overall care as excellent or very good (91.6%) is higher than the England rate of 89.0%.
- Compared to similar CCGs, Barnsley’s rate is the second highest.
Mortality data can give an indication of the demand for end-of-life care for people with cancer, and the need for support for their families and carers (for example, financial or bereavement services). The overall number of cancer deaths each year in the UK has remained fairly static over recent years, while mortality rates (the number of cancer deaths per head of population) are decreasing thanks to improvements in early diagnosis, treatments and cancer services.

Cancer is the most common cause of death in England and Wales – 29% of all deaths in 2013 were from cancer; this is reflected in Barnsley. During 2012-2014 in Barnsley, 1,957 people were registered as dying from cancer, accounting for more than a quarter (28.5%) of all deaths.

**Figure 39. Number of deaths to Barnsley men from cancer types (2012-2014)**

- Lung cancer is responsible for the greatest proportion of cancer deaths in Barnsley (25.8% of all male and 25.1% of all female cancer deaths) (figures 39 and 40).
- In men, prostate cancer is the second largest cause of death from cancer, being responsible for 9.5% of all male cancer deaths (figure 39).

**Figure 40. Number of deaths to Barnsley women from cancer types (2012-2014)**

- In women, breast cancer is the second major cause of death from cancer, accounting for 12.7% of all female cancer deaths (figure 40).
- Note: although ‘other’ cancers is the second largest group for both males and females, this group contains multiple cancer types, eg bone, soft tissue, brain, endocrine glands etc, which in themselves do not constitute the second largest group.

Source: Primary Care Mortality Database
Mortality by tumour type:

The following charts illustrate Barnsley’s cancer mortality rates for the biggest four tumour groups (breast, lower gastrointestinal, lung and urology) compared to similar CCGs and England.

Figure 41. Mortality rate from breast cancer (all ages) for Barnsley CCG, 10 ‘similar’ CCGs and England (2013)

- Barnsley’s age-standardised mortality rate from breast cancer (27.4 per 100,000) is lower than the England rate of 35.3 per 100,000, but not significantly lower.
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the second lowest.

Figure 42. Mortality rate from lower GI cancer (includes colorectal) (all ages) for Barnsley CCG, 10 ‘similar’ CCGs and England (2013)

- Barnsley’s age-standardised mortality rate from lower GI cancer (25.4 per 100,000) is lower than the England rate of 34.5 per 100,000, but not significantly lower.
- Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the third lowest.
Barnsley’s age-standardised mortality rate from lung cancer (71.6 per 100,000) is higher than the England rate of 66.6 per 100,000, but not significantly higher.

Compared to 10 ‘similar’ CCGs, Barnsley’s rate is the second lowest.

Barnsley’s age-standardised mortality rate from urology cancer (30.1 per 100,000) is significantly lower than the England rate of 42.4 per 100,000.

Barnsley’s rate is the lowest of the comparator CCGs.
Mortality at local level:

This section illustrates age-standardised rates for mortality from all cancers, and site specific cancers, by Barnsley electoral wards.

Note: due to smaller cohorts at the lower level of geography and specific tumour types, confidence intervals are large (figures 46 To 49). This could potentially lead to less reliable results.

Figure 45. Mortality rate from all cancers (persons, all ages) for Barnsley electoral wards (2010 to 2014)

- Within Barnsley, three wards (St Helens, Stairfoot and Dearne South) have significantly higher cancer mortality rates for all cancers than the overall rate for Barnsley (303.9 per 100,000).
- Two wards (Darton West and Penistone West) have significantly lower rates than the Barnsley rate.
- The rates within the wards range from 234.2 per 100,000 in Penistone West to 378.0 per 100,000 in St Helens.
Figure 47. Mortality rate from lower GI cancer (persons, all ages) for Barnsley electoral wards (2010 to 2014)

- Within Barnsley, 11 wards (Old Town, St Helens, Darton East, Stairfoot, Darfield, Hoyland Milton, Kingstone, Wombwell, Worsbrough and Dodworth) have higher lower GI cancer mortality rates than the overall rate for Barnsley (24.3 per 100,000), but not significantly higher.
- One ward (North East) has a significantly lower rate than the Barnsley rate.
- The rates within the wards range from 8.8 per 100,000 in North East to more than four times higher (42.6 per 100,000) in Old Town.

Figure 46. Mortality rate from breast cancer (females, all ages) for Barnsley electoral wards (2010 to 2014)

- Within Barnsley, 13 wards (Darton East, Old Town, Dearne South, Penistone East, Rockingham, Hoyland Milton, Worsbrough, Central, St Helens, Dodworth, North East, Royston and Kingstone) have higher breast cancer mortality rates than the overall rate for Barnsley (32.9 per 100,000), but not significantly higher.
- The rates within the wards range from 15.6 per 100,000 in Darton West to more than three times higher (58.5 per 100,000) in Darton East.
- When compared to incidence, Darton East has the highest incidence rate in Barnsley (SIR 119.2) (figure 8), and also the highest mortality rate (58.5 per 100,000). However, Darton West has the second highest incidence rate within Barnsley (108.6), but the lowest mortality rate (15.6 per 100,000). Conversely, Dearne South has the lowest incidence rate (73.2), but the third highest mortality rate (46.1 per 100,000).
Within Barnsley, four wards (Dearne South, Dearne North, St Helens and Stairfoot) have **significantly higher** mortality rates from lung cancer than the overall rate for Barnsley (77.9 per 100,000).

Three wards (Darton West, Penistone East and Worsbrough) have **significantly lower** rates than the Barnsley rate.

The rates within the wards range from 42.0 per 100,000 in Worsbrough to **more than double** (119.3 per 100,000) in Dearne South.

Within Barnsley, eight wards (Penistone East, Kingstone, Wombwell, Dearne North, Royston, Worsbrough, Hoyland Milton and Darton West) have higher mortality rates from prostate cancer than the overall rate for Barnsley (38.3 per 100,000), but not significantly higher.

The rates within the wards range from 12.6 per 100,000 in Central to **more than five times higher** (67.8 per 100,000) in Penistone East.

When compared to incidence, Darfield has the second highest incidence rate in Barnsley (SIR 96.5) (figure 11), but the third lowest mortality rate (18.7 per 100,000).
Mortality rates by deprivation quintile:

This section illustrates age-standardised rates for mortality from all cancers, and site specific cancers, by Barnsley deprivation quintiles. For deprivation analysis, data was grouped into five geographical quintiles based on the Lower Super Output Area (LSOA) of residence. The quintiles are defined using the Indices of Multiple Deprivation (IMD) 2015. Quintile 1 contains the most deprived fifth (20%) of LSAs and Quintile 5 contains the least deprived fifth (20%). See Appendix 1 for further information. The white points in the following charts show the mortality rates and the 95% confidence intervals are represented by the top and bottom of the shaded area around these points.

**Note:** due to smaller cohorts at the lower level of geography and specific tumour types, confidence intervals are large (figures 51 to 54). This could potentially lead to less reliable results.

- Mortality from all cancers is **significantly higher** in the **most deprived quintile** (346.1 per 100,000) than in Barnsley overall (303.9 per 100,000).
- In the **least deprived** quintile, the rate (213.7 per 100,000) is **significantly lower** than the Barnsley rate.
• The lowest rates for breast cancer mortality are in the most deprived quintiles (1 and 2); they are lower than the overall Barnsley rate, although not significantly.
• Rates are higher than the Barnsley rate in quintiles 3 and 5, but not significantly higher.

• None of the rates for lower GI cancer mortality are significantly different to the rate for Barnsley (24.3 per 100,000). However, the rate in the most deprived quintile (26.1 per 100,000) is more than double the rate in the least deprived quintile (12.0 per 100,000).
Mortality from lung cancer, in Barnsley, reflects the pattern of deprivation, with the rate in the most deprived quintile being significantly higher than the overall Barnsley rate and rates in the three least deprived quintiles being significantly lower.

The rate in the most deprived quintile (111.6 per 100,000) is three times higher than the rate in the least deprived quintile (37.2 per 100,000).

None of the rates for prostate cancer mortality are significantly different to the rate for Barnsley (37.5 per 100,000). However, the rate in the least deprived quintile (60.0 per 100,000) is more than double the rate in the second least deprived quintile (26.2 per 100,000).
Life expectancy gap between the most deprived quintile and least deprived quintile of Barnsley

Public Health England’s Segment Tool provides information on life expectancy and the causes of death that are driving inequalities in life expectancy at national, regional and local area levels.

Figure 55 Illustrates the breakdown of the life expectancy gap within Barnsley (between the most and least deprived quintiles).

**Figure 55. Breakdown of life expectancy gap between Barnsley most deprived quintile and Barnsley least deprived quintile, by broad cause of death, 2012-2014**

- For women in Barnsley, cancer is the largest cause of death contributing to the life expectancy gap between the most deprived and least deprived areas (26.9%). For men, cancer is the third largest cause.
- Further analysis by Public Health England indicates that if the most deprived quintile in Barnsley had the same cancer mortality rates as the least deprived quintile, women would gain 1.53 years in life expectancy and men would gain 1.08 years.
Under 75 Mortality from Cancer:
Cancer is the highest cause of death in England in under 75s. To ensure that there continues to be a reduction in the rate of premature mortality from cancer, there needs to be concerted action in both prevention and treatment.

Figure 56. Under 75 mortality rate from cancer, Barnsley, statistical neighbours and England (2012-14)

- Barnsley’s 2012/14 rate for cancer mortality in under 75s (157.3 per 100,000) is significantly higher than the rate for England (141.5 per 100,000).
- Compared to statistical neighbours, Barnsley’s rate is the sixth lowest.
- Barnsley’s rate of 157.3 per 100,000 represents 985 people aged under 75 dying from cancer during 2012/14.

Figure 57. Under 75 cancer mortality rate for Barnsley, Yorkshire and the Humber and England (2001/03 to 2012/14)

- Barnsley’s rates for under 75 cancer mortality are higher than the rates for Y&H and England at each time point during the period 2001/03 to 2012/14, apart from 2011/13, when the rate was slightly lower than the rate for Y&H.
- Rates have fluctuated during the period, with an overall decrease from 197.0 per 100,000 in 2001/03 to 157.3 per 100,000 in 2012/14. However, the 2012/14 rate showed an increase on the 2011/13 rate.

For further information on under 75 mortality from cancer, please refer to the Research and Business Intelligence Team’s briefing ‘Under 75 mortality from cancer in Barnsley 2010-2014’.

Produced by the Research and Business Intelligence Team: Research&BusinessIntelligenceTeam@barnsley.gov.uk
The above map illustrates Lower Super Output Areas in Barnsley, grouped by IMD 2015 scores. The blue areas are the least deprived and the red areas are the most deprived.
Incidence:

Age-standardised rates (figures 3 to 6):

Age-standardised rates take into account the variation in the age structures of populations. The age-standardised rates adjust for age to allow comparisons between different areas or time trends to be made. The rates are calculated by taking the age-specific crude rates and applying them to the age distribution of a hypothetical population (in this case, the 2013 European Standard Population (ESP)).

The tumour groups included for incidence along with their corresponding international classification of disease (ICD10) codes are as follows:

- All cancers: all malignant cancers excluding non-melanoma skin cancer (NMSC) (ICD10 codes C00-C97, excluding C44).
- Breast: C50
- Urology: C60-C68 (includes prostate cancer)
- Lung: C33, C34, C37, C38, C39, C45 (includes Thorax cancer)
- Lower Gastrointestinal (GI): C17-C21 (includes colorectal).

Data are not currently available separately for prostate, colorectal and lung cancer, hence the reason they are presented as higher level groupings of cancers. However, the majority of urological cancers will be prostate cancer, of Lower GI will be colorectal cancer and of lung cancers the majority will be lung cancers (usually classified as C33-34).

Indirectly age-sex standardised ratios (figures 7 to 11):

All cancers:

Indirectly age-sex standardised ratios (number of new cases as a percentage of expected new cases), calculated relative to England. Expected number of new cases of all cancer (ICD10 C00-C97 excluding C44) calculated by applying age-sex-specific incidence rates for England in 2007-11 to each area's population. Ratios calculated by dividing the observed total number of new cases in the area by the expected number and multiplying by 100.

Breast, colorectal, lung and prostate cancer:

Methodology as above, but for ICD10 codes C50, C18-20, C33-34 and C61 respectively.

Staging Data (table 2):

The ICD10 codes used in the staging data are as follows:

- Breast: C50
- Colorectal: C18-C20
- Lung: C34
- Prostate: C61

Metadata
Produced by the Research and Business Intelligence Team: Research&BusinessIntelligenceTeam@barnsley.gov.uk
Mortality:

Age-standardised rates (figures 41 to 54):

Age-standardised rates take into account the variation in the age structures of populations. The age-standardised rates adjust for age to allow comparisons between different areas or time trends to be made. The rates are calculated by taking the age-specific crude rates and applying them to the age distribution of a hypothetical population (in this case, the 2013 European Standard Population (ESP)).

The tumour groups included for mortality along with their corresponding international classification of disease (ICD10) codes are as follows:

- Breast: C50
- Lower Gastrointestinal (GI): C17-C21 (includes colorectal)
- Lung: C33, C34, C37, C38, C39, C45 (includes Thorax cancer)
- Urology: C60-C68 (includes prostate cancer)

Data are not currently available separately for prostate, colorectal and lung cancer, hence the reason they are presented as higher level groupings of cancers. However, the majority of urological cancers will be prostate cancer, of Lower GI will be colorectal cancer and of lung cancers the majority will be lung cancers (usually classified as C33-34).

ICD 10 codes for electoral ward and deprivation quintile data:

- All cancers: C00-C979
- Breast: C50
- Lower Gastrointestinal (GI): C17-C21 (includes colorectal)
- Lung: C33-C34
- Prostate: C61

Confidence Intervals:

Confidence intervals are a statistical method of accounting for variability in data. Variability means that data collected under the same circumstances can yield different results. The confidence interval is therefore used to represent with a confidence of 95% the range in which the true value will lie. Where confidence intervals do not overlap, we say that the difference is statistically significant. Statistically significant differences will indicate that there is a real underlying difference between the proportions.

‘Similar’ CCGs and Statistical Neighbours

‘Similar’ CCGs are deemed to have similar characteristics based on demographic variables. Comparing against ‘similar’ CCGs provides an initial guide as to whether performance is above or below the level that might be expected. The ‘similar’ CCGs used in this briefing are those identified by Public Health England/NHS England in their ‘Commissioning for Value’ packs. [https://www.england.nhs.uk/resources/resources-for-ccgs/comm-for-value/](https://www.england.nhs.uk/resources/resources-for-ccgs/comm-for-value/)

These differ slightly to the comparator local authorities shown in figure 56 and in other reports produced by the Research and Business Intelligence Team, which illustrate the Chartered Institute of Public Finance and Accountancy (CIPFA) statistical neighbours, recommended by Public Health England.
Cancer Awareness Measure (CAM). Accessed 6th May 2016 from:

Local Cancer Intelligence (age-standardised incidence, survival, patient experience and mortality). Accessed May 2016 from:
http://lcicancertoolkit.co.uk/

National Cancer Intelligence Network (Urgent GP referral rates for suspected cancer and staging data). Accessed 2nd May 2016 from:
http://www.ncin.org.uk/publications/data_briefings/gp_referral_rates
http://www.ncin.org.uk/publications/survival_by_stage

Public Health England, Cancer Services Profile (incidence, prevalence, screening, two-week wait referrals). Accessed May 2016 from:
http://fingertips.phe.org.uk/profile/cancerservices

Public Health England, Local Health (incidence at ward level). Accessed May 2016 from:
Wwww.localhealth.org.uk

http://fingertips.phe.org.uk/profile/segment